

# SAFETY DATA SHEET

Preparation Date: 6/16/2014

Revision Date: 6/16/2014

Revision Number: G1

## 1. IDENTIFICATION

### Product identifier

**Product code:** HP592  
**Product Name:** P-DIOXANE, HPLC GRADE

### Other means of identification

**Synonyms:** Dioxan  
Dioxane  
Dioxane-1,4  
Glycol ethylene ether  
Tetrahydro-p-dioxin  
Tetrahydro-1,4-dioxin  
1,4-Dioxane  
Dioxane  
1,4-Dioxacyclohexane  
Diethylene dioxide  
1,4-Diethylene dioxide  
Diethylene dioxide  
Diethylene ether  
Di(ethylene oxide)  
Diokan  
Dioxanne (French)  
p-Dioxin, tetrahydro-  
Dioxyethylene ether  
**CAS #:** 123-91-1  
**RTECS #** JG8225000  
**CI#:** Not available

### Recommended use of the chemical and restrictions on use

**Recommended use:** Stabilizer. Solvent. Degreasing agent. Dispersing agent.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemicals and Laboratory Products, Inc.  
14422 South San Pedro St.  
Gardena, CA 90248  
(310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Regina Wachenheim (East Coast)

## 2. HAZARDS IDENTIFICATION

### Classification

**Product code:** HP592

**Product name:** P-DIOXANE, HPLC  
GRADE

1 / 13


This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Flammable liquids	Category 2

### Label elements

**Danger**

**Hazard statements**  
Causes serious eye irritation  
Suspected of causing cancer  
May cause respiratory irritation. May cause drowsiness or dizziness  
May cause damage to organs through prolonged or repeated exposure  
Highly flammable liquid and vapor



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

May be harmful in contact with skin

### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Wear eye/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/./? /equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool

### Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention  
In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Product code:** HP592

**Product name:** P-DIOXANE, HPLC  
GRADE

2 / 13

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

#### Precautionary Statements - Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

#### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
p-Dioxane 123-91-1	123-91-1	100	*

### 4. FIRST AID MEASURES

#### First aid measures

##### General Advice:

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

##### Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.

##### Eye Contact:

Flush eye with water for 15 minutes. Get medical attention.

##### Inhalation:

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

##### Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

#### Most important symptoms and effects, both acute and delayed

##### Symptoms

Causes eye irritation. May cause skin irritation. Irritating to respiratory system. Dyspnea (Difficulty breathing and shortness of breath). Central nervous system effects. Dizziness. Drowsiness. Headache. Ataxia. Nausea. Vomiting.

#### Indication of any immediate medical attention and special treatment needed

##### Notes to Physician:

Treat symptomatically

#### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

##### Suitable Extinguishing Media:

Carbon dioxide (CO<sub>2</sub>). Dry chemical. Alcohol-resistant foam. Water spray.

##### Unsuitable Extinguishing Media:

Do not use a solid (straight) water stream as it may scatter and spread fire.

#### Specific hazards arising from the chemical

##### Hazardous Combustion Products:

Carbon monoxide; Carbon dioxide

**Specific hazards:**

Flammable. May be ignited by heat, sparks or flames. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated. Fire may produce irritating, corrosive and/or toxic gases.

**Special Protective Actions for Firefighters****Specific Methods:**

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

**Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures****Personal Precautions:**

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

**Methods and material for containment and cleaning up****Methods for containment**

Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

**7. HANDLING AND STORAGE****Precautions for safe handling****Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

**Safe Handling Advice:**

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Technical Measures/Storage Conditions:**

Hygroscopic. Air sensitive. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep away from direct sunlight. Store below 11.667 deg. C/53 deg. F. Store in a segregated and approved area. Store away from incompatible materials.

**Incompatible Materials:**

Oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters****National occupational exposure limits****United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
p-Dioxane - 123-91-1	100 ppm TWA 360 mg/m <sup>3</sup> TWA	1 ppm Ceiling 30 min 3.6 mg/m <sup>3</sup> Ceiling 30 min	20 ppm TWA	None

**Canada**

Components	Alberta	British Columbia	Ontario	Quebec
p-Dioxane - 123-91-1	20 ppm TWA 72 mg/m <sup>3</sup> TWA	20 ppm TWA	20 ppm TWA	20 ppm TWAEV 72 mg/m <sup>3</sup> TWAEV

**Australia and Mexico**

Components	Australia	Mexico
p-Dioxane 123-91-1	10 ppm TWA 36 mg/m <sup>3</sup> TWA	25 ppm TWA 90 mg/m <sup>3</sup> TWA 100 ppm STEL 360 mg/m <sup>3</sup> STEL

**Appropriate engineering controls****Engineering measures to reduce exposure:**

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Individual protection measures, such as personal protective equipment****Personal Protective Equipment**

- Eye protection:** Goggles.
- Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical state:</b> Liquid.	<b>Appearance:</b> No information available	<b>Color:</b> Clear. Colorless.
<b>Odor:</b> Faint. Pleasant. Ether-like.	<b>Taste</b> No information available	<b>Formula:</b> C4-H8-O2
<b>Molecular/Formula weight:</b> 88.11	<b>Flash point (°C):</b> 12	<b>Flashpoint (°C/°F):</b> 12 °C/53.6 °F 15.8-18 °C/18.3-64.9 °F
<b>Flash Point Tested according to:</b> Closed cup Open cup	<b>Lower Explosion Limit (%):</b> 2%	<b>Upper Explosion Limit (%):</b> 22%
<b>Autoignition Temperature (°C/°F):</b> 180 °C/356 °F	<b>pH:</b> No information available	<b>Melting point/range(°C/°F):</b> 11.80 °C/53.2 °F
<b>Boiling point/range(°C/°F):</b> 101°C/214°F	<b>Decomposition temperature(°C/°F):</b> No information available	<b>Specific gravity:</b> 1.0329-1.0337
<b>Density (g/cm3):</b> No information available	<b>Bulk density:</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> 3.9
<b>Evaporation rate:</b> 2.7 (butyl acetate = 1)	<b>Vapor density:</b> 3.03	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> -0.27	<b>Viscosity:</b> No information available
<b>Miscibility:</b> Miscible with water	<b>Solubility:</b> No information available	

## 10. STABILITY AND REACTIVITY

### Reactivity

Hydroperoxide-free Dioxane rapidly forms hydroperoxide on contact with air. Exposure to sunlight accelerates this formation. Decomposes to carbon monoxide.

Incompatible with silver perchlorate, oxidizing agents, sulfur trioxide, decaborane, triethynyl aluminum, boron trifluoride.

Dioxane may react with hydrogen in the presence of Rainey nickel above 210C (410F)

Reacts vigorously with oxidizing agents

Forms peroxides in absence of inhibitors an in the presence of air. Peroxide formation may occur in containers that have been opened and remain in storage. Peroxides can be detonated by friction

### Chemical stability

**Stability:** Stable at normal conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Exposure to sunlight.. Exposure to air. Exposure to moist air. Incompatible materials.

**Incompatible Materials:** Oxidizing agents.

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**

Ingestion. Skin. Eyes. Inhalation.

### Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (inhalation-gas) 46mg/l

### **Component Information**

*p-Dioxane - 123-91-1*

**LD50/oral/rat** = No information available

**LD50/oral/mouse** = 5300 mg/kg

**LD50/dermal/rabbit** = 7600 µL/kg Dermal LD50Rabbit

**LD50/dermal/rat** = No information available

**LC50/inhalation/rat** = 46 g/m<sup>3</sup> Inhalation LC50 Rat 2 h  
52 mg/l 4 h

**LC50/inhalation/mouse** = No information available

**Other LD50 or LC50information** = 2000 mg/kg Oral LD50 Rabbit

### **Product Information**

**LD50/oral/rat** =

**VALUE- Acute Tox Oral** = 4200mg/kg

**LD50/oral/mouse** =

**Value - Acute Tox Oral** = 5300mg/kg

**LD50/dermal/rabbit**

**VALUE-Acute Tox Dermal** = 7600mg/kg

**LD50/dermal/rat**

**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**

**VALUE-Vapor** = 52mg/l (4-hr)

**VALUE-Gas** = No information available

**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**

**VALUE-Vapor** = No information available

**VALUE - Gas** = No information available

**VALUE - Dust/Mist** = No information available

### Symptoms

**Skin Contact:**

May cause skin irritation. Mild skin irritation. It may be absorbed through the skin.

**Eye Contact:**

Causes serious eye irritation. Moderate to severe eye irritation. Vapors cause eye irritation. Splashes cause severe irritation, possible corneal damage..

**Inhalation** Irritating to respiratory system. Easily absorbed through lungs. Causes irritation of the respiratory tract. May cause pulmonary edema. May affect respiration (coughing, dyspnea - shortness of breath and difficulty breathing), behavior and brain (headache, convulsions, dizziness, narcosis, confusion, ataxia, irritability, excitement, drowsiness, altered sleep time, psychophysical changes), cardiovascular system (increased blood pressure), gastrointestinal tract (nausea, vomiting), liver, and kidneys.

**Ingestion** Causes gastrointestinal (digestive) tract irritation with nausea, vomiting, sore throat, abdominal pain. May also affect behavior (general anesthetic, urinary system).

**Aspiration hazard** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Prolonged exposure may cause central nervous system depression, loss of appetite, nausea, abdominal tenderness, and liver or kidney damage.

Prolonged skin contact may cause cracking and drying of skin.

**Sensitization:** No information available

**Mutagenic Effects:** May affect genetic material  
Animal experiments showed mutagenic effects

**Carcinogenic effects:** Possibly carcinogenic to humans. Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
p-Dioxane	A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans	Group 2B - Monograph 71 [1999] Supplement 7 [1987] Monograph 11 [1976]	Reasonably Anticipated To Be A Human Carcinogen	Present	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*Group 2B - Possibly Carcinogenic to Humans*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available

**Developmental Effects:** No information available

**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** respiratory system. central nervous system.

**STOT - repeated exposure** liver. kidney. Skin.

**Target Organs:** Skin. Liver. Kidneys.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**



## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects:** Aquatic environment.

*p*-Dioxane - 123-91-1

**Freshwater Fish Species Data:** 10306 - 14742 mg/L LC50 Pimephales promelas 96 h static 1  
9850 mg/L LC50 Pimephales promelas 96 h 1  
9850 mg/L LC50 Pimephales promelas 96 h flow-through 1  
10000 mg/L LC50 Lepomis macrochirus 96 h semi-static 1  
10000 mg/L LC50 Lepomis macrochirus 96 h static 1

**Water Flea Data:** 163 mg/L EC50 water flea 48 h

**Persistence and degradability:** Not inherently biodegradable

**Bioaccumulative potential:** Potential for bioconcentration in aquatic organisms is low.

**Mobility:** It is expected to have high mobility in soil.

## 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

#### **Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

#### **Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
p-Dioxane	None	None	None	U108

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN1165  
**Proper Shipping Name:** Dioxane  
**Hazard Class:** 3  
**Subsidiary Risk:** Not applicable  
**Packing Group:** II  
**Marine Pollutant:** No data available  
**ERG No:** 127  
**DOT RQ (lbs):** No information available

**Symbol(s):** R3

### TDG (Canada)

**UN-No:** UN1165  
**Proper Shipping Name:** Dioxane  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available

### ADR

**Product code:** HP592

**Product name:** P-DIOXANE, HPLC  
GRADE

9 / 13

## 14. TRANSPORT INFORMATION

**UN-No:** UN1165  
**Proper Shipping Name:** Dioxane  
**Hazard Class:** 3  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

### IMO / IMDG

**UN-No:** UN1165  
**Proper Shipping Name:** Dioxane  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**EMS:** F-E  
**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**UN-No:** UN1165  
**Proper Shipping Name:** Dioxane  
**Hazard Class:** 3  
**Subsidiary Risk:** 3  
**Packing Group:** II  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** UN1165  
**Proper Shipping Name:** Dioxane  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available

### IATA

**UN-No:** UN1165  
**Proper Shipping Name:** Dioxane  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**ERG Code:** 3L  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>p-Dioxane</i>	Present	Present KE-10463	Present	Present (5)-839	Present	Present	Present 204-661-8

## U.S. Regulations

### *p*-Dioxane

**Massachusetts RTK:** Present  
**New Jersey RTK Hazardous Substance List:** Present  
**New Jersey (EHS) List:** Present  
**New Jersey - Discharge Prevention - List of Hazardous Substances:** Present  
**Pennsylvania RTK:** Environmental hazard  
Special hazardous substance  
**Pennsylvania RTK - Environmental Hazard List** Present  
**Pennsylvania RTK - Special Hazardous Substances** Present  
**Minnesota - Hazardous Substance List:** Present  
**New York Release Reporting - List of Hazardous Substances:**  
100 lb RQ  
1 lb RQ  
**Louisiana Reportable Quantity List for Pollutants:** 100lbfinal RQ  
45.4kgfinal RQ  
**California Directors List of Hazardous Substances:** Present

### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

#### Chemicals Known to the State of California to Cause Cancer:

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

#### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>p</i> -Dioxane	carcinogen	Not Listed	Not Listed	Not Listed

## CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>p</i> -Dioxane	100 lb final RQ 45.4 kg final RQ	None	None	None	0.1 % de minimis concentration

## U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>p</i> -Dioxane	Not Applicable	Not Applicable

## Canada

#### WHMIS hazard class:

B2 Flammable liquid  
D2A Very toxic materials  
D2B Toxic materials

#### *p*-Dioxane

B2 D2A D2B

#### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
<i>p</i> -Dioxane	0.1 %

## Inventory

Components	Canada (DSL)	Canada (NDSL)
p-Dioxane	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
p-Dioxane	Not listed	Not listed

## EU Classification

### R-phrase(s)

R11 - Highly flammable.  
 R19 - May form explosive peroxides.  
 R40 - Limited evidence of a carcinogenic effect  
 R66 - Repeated exposure may cause skin dryness or cracking.  
 R36/37 - Irritating to eyes and respiratory system.

### S -phrase(s)

S 2 - Keep out of the reach of children.  
 S 9 - Keep container in a well-ventilated place.  
 S16 - Keep away from sources of ignition - No smoking.  
 S46 - If swallowed, seek medical advice immediately and show this container or label.  
 S36/37 - Wear suitable protective clothing and gloves.

Components	Classification	Concentration Limits:	Safety Phrases
p-Dioxane	F; R11-19 Xi; R36/37 Carc.Cat.3; R40 R66	No information	S2 S9 S16 S36/37 S46

The product is classified in accordance with Annex VI to Directive 67/548/EEC

### Indication of danger:

Xi - Irritant.  
 Xn - Harmful.  
 F - Highly flammable.



## 16. OTHER INFORMATION

**16. OTHER INFORMATION**

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	2
Fire Hazard	3
Reactivity	0



See Section 8.

Preparation Date: 6/16/2014  
Revision Date: 6/16/2014  
Prepared by: Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Material Safety Data Sheet**